Revision 1

Store at -20C

#8886

PICH (D4G8) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H Mk	Endogenous	175	Rabbit IgG	#Q2NKX8	54821

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

PICH (D4G8) Rabbit mAb recognizes endogenous levels of total PICH protein.

Species predicted to react based on 100% sequence homology

Hamster

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly610 of human PICH protein.

Background

PICH is a helicase of the SNF2 family of ATPases and is essential for proper chromosome segregation during mitosis (1). While PICH was originally proposed to participate in spindle assembly checkpoint signaling (1), that function was subsequently called into question (2). When phosphorylated at Thr1063 by CDK1, PICH binds the polo-box domain of the mitotic kinase PLK1 (1) and targets it to chromosome arms (3), where it appears to facilitate proper chromosome arm cohesion (4). PICH is also a substrate of PLK1 (1). Localized to the cytoplasm during interphase, PICH begins to accumulate at centromeres and kinetochores in prometaphase (4). As chromosomes begin to separate at the onset of anaphase, PICH associates with ultrafine threads between sister centromeres thought to be composed of entangled DNA (5), a natural consequence of DNA replication. PICH is proposed to cooperate with BLM, a RecQ-like helicase implicated in the genetic disorder Bloom's Syndrome, to displace centromeric histones along these threads, thus enabling them to span large distances without breaking (6). This provides a temporal window for topoisomerase IIα-mediated disentanglement (7). Defects in PICH or BLM disrupt proper chromatid segregation and result in the formation of micronuclei (6).

Background References

1. Baumann, C. et al. (2007) *Cell* 128, 101-14.
2. Hübner, N.C. et al. (2010) *Chromosoma* 119, 149-65.
3. Leng, M. et al. (2008) *Cell Cycle* 7, 1480-9.
4. Kurasawa, Y. and Yu-Lee, L.Y. (2010) *Mol Biol Cell* 21, 1188-99.
5. Wang, L.H. et al. (2008) *Chromosoma* 117, 123-35.
6. Ke, Y. et al. (2011) *EMBO J* 30, 3309-21.
7. Nitiss, J.L. (2009) *Nat Rev Cancer* 9, 327-37.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **Mk:** Monkey

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Limited Uses

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